

Flowering Rush Contingency Control Plan

Last updated: June 12, 2014



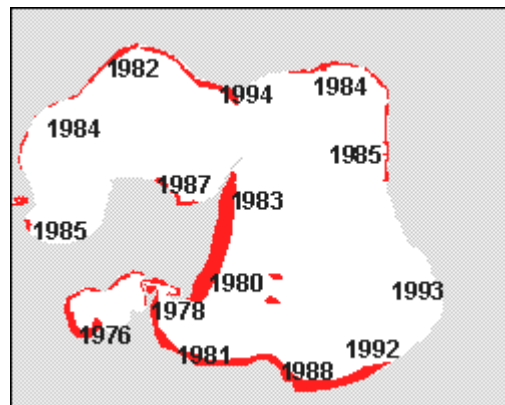
Flowering rush on Detroit Lake's public beach, 2008

Introduction

The Eurasian Flowering Rush Contingency Control Plan is a resource for management and prevention of Eurasian flowering rush (FR) in the Pelican Group of Lakes Improvement District. It also addresses the treatment and its effectiveness of FR in case of its introduction into the Pelican Group of Lakes Improvement District.

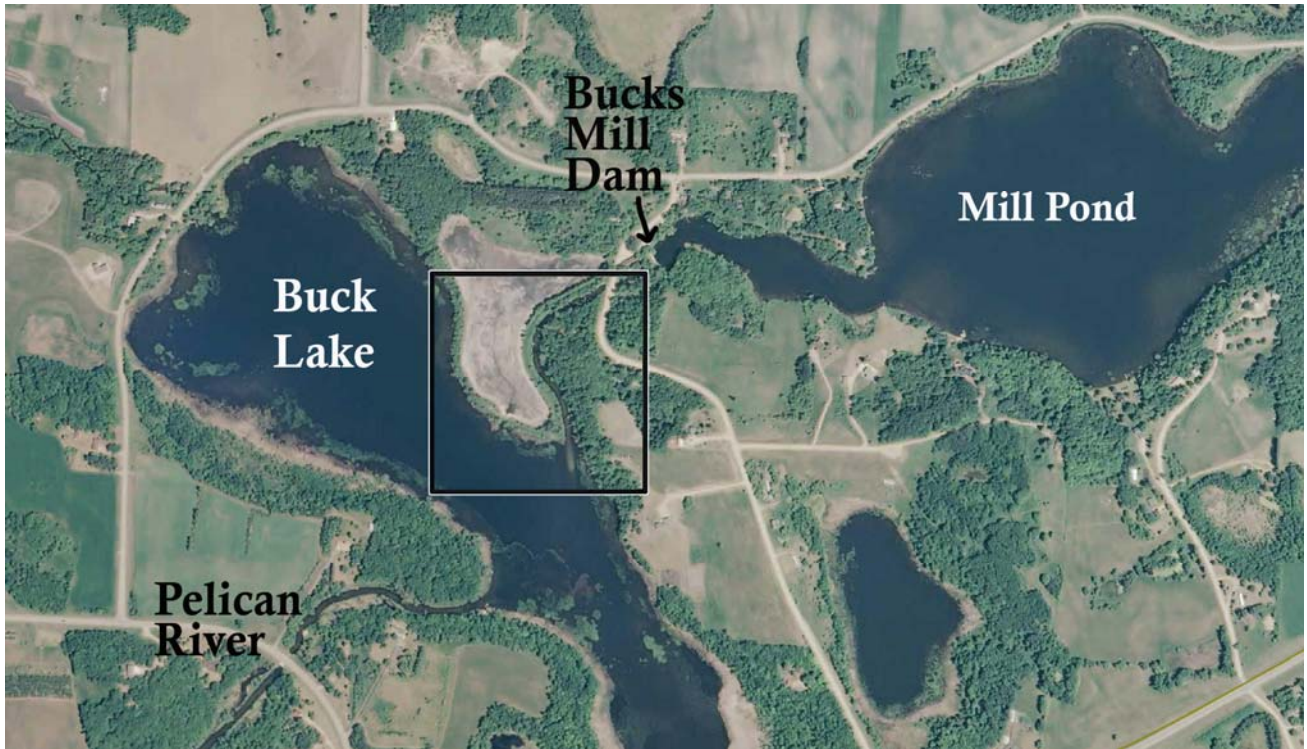
Origin

FR was introduced into North America as an ornamental garden plant from Eurasia. It was first identified in Deadshot Bay in the mid-1970s, and spread into the Big Detroit by the end of that decade. By the early 1980s it was found in many places around Big and Little Detroit; and moved down the Pelican River to Muskrat, Sallie and Melissa Lakes. In 2007, it was found in Mill Lake, and 2008 it was found in Buck Lake. The next lake down the chain is Little Pelican. As of August 2013, the furthest FR population documented is Buck Lake.



Detroit Lake Flowering Rush spread

Source: <http://www.prwd.org/?D=45&PHPSES SID=4653d36f2da9717664047bf2925d2649>



GPS coordinates are available for all 8 locations on the map above. All these locations of Flowering rush were removed by hand.

Flowering Rush Identification

Leaves: The leaves grow upwards from the rhizome at the base of the plant on opposite sides of the stem (2-ranked). The leaves are about 1m long and approximately 1cm wide. They have smooth edges (not jagged) and are triangular in cross section. The veins run parallel to the edge of the leaf.

Stem: The stem of the flower is leafless and grows taller than the leaves, to over a height of 1m. At the top is an umbel; a cluster of flowers with stalks that originate from the tip of the stem. At the point where the flower stalks attach to the stem, there are three purplish-brown bracts.

Flower: Flowering occurs throughout the summer but high water levels tend to hinder or prevent flowering. Individual flowers are about 2-2.5cm across and are held upright on elongate stalks. The flower is made up of 3 petals and 3 sepals. The flower color ranges from deep pink to white and occasionally the sepals have a slight green tinge. Each flower has nine stamens and six separate pistils.

Root: Thick creeping rhizomes give rise to the dense colonies of FR



Affects of Introduction

FR is an extremely invasive aquatic plant. It displaces native riparian vegetation, and easily invades areas not occupied by other plants. It grows in dense clusters up to 10 feet deep. Depending on water levels it can become emergent.

FR makes aesthetics difficult. It can prevent boating, swimming, and can limit fishing. Shoreline access becomes difficult. As a result property values decrease.

Virtually all of Pelican Lake up to 10 feet of water is vulnerable to FR invasion. Most of Pelican Lake's beaches contain a limited density of native aquatic plants, thus making it more vulnerable.

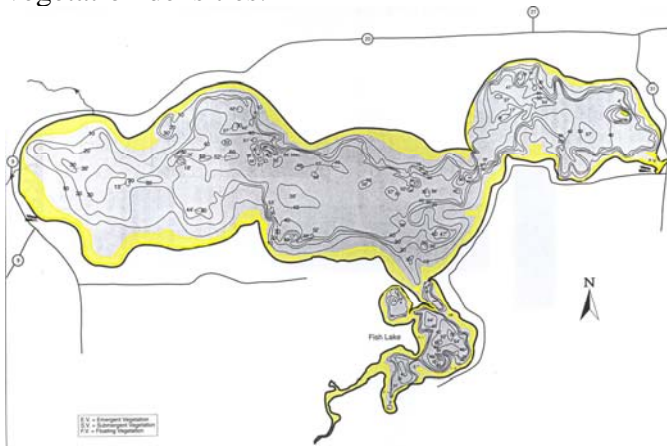
Likelihood of Introduction

FR does not produce fertile seeds. It instead spreads by broken rhizomes and root pieces. The rhizomes and root pieces are broken and spread by ice, wind and wave action, mechanical harvesters, animals (such as the muskrat), boats, and people. People who purchase seeds for aquatic gardens may also introduce FR. The purchase and transportation of FR and other exotic species is illegal.

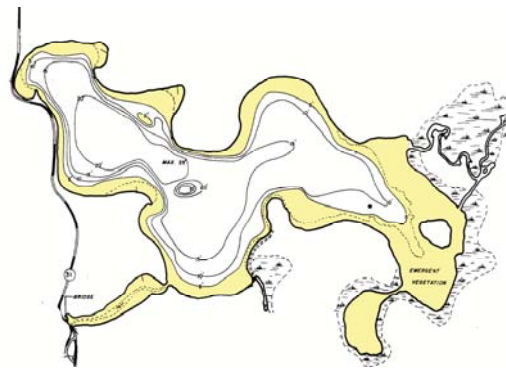
It is possible that FR will inevitably be introduced into Pelican Lake by the Pelican River since the lakes up stream contain the exotic plant. Fortunately the Pelican River and wetlands between Lake Melissa and Pelican contains dense native aquatic vegetation, limiting FR's ability to take root. Aggressive efforts by the Pelican River Watershed District (PRWD) to control FR, and their success in researching new effective herbicide control, will limit its spread down stream. In addition, the fact that PGOLID is digging out any occurrences of FR in Buck Lake and the Pelican River, will keep any spread in check for a while. This hand removal has been effective since 2008 in halting the spread of FR downstream. The plants inability to produce fertile seeds also limits its rate of spread.

The Pelican River inlet to Little Pelican is surrounded by a dense growth of vegetation, which is considered an asset to slowing the flow and catching possible clippings. PGOLID will monitor the vegetation density in that area to make sure that nothing occurs to reduce the natural vegetation in that area.

Based on historical rate of spread, FR has a possibility to eventually impact the Pelican Group of Lakes Improvement District. The yellow areas are susceptible to FR, based on water depth and vegetation densities.



Big Pelican, Bass and Fish Lake: areas susceptible to Flowering rush establishment are in yellow.



Little Pelican Lake: areas susceptible to Flowering rush establishment are in yellow.

Control

Many people control aquatic vegetation growth on infested beaches by cutting, digging, and raking them out by hand. This type of removal does require a DNR permit. There is evidence that mechanical harvesting of FR can accelerate its spread if one is not careful with the plant fragments.

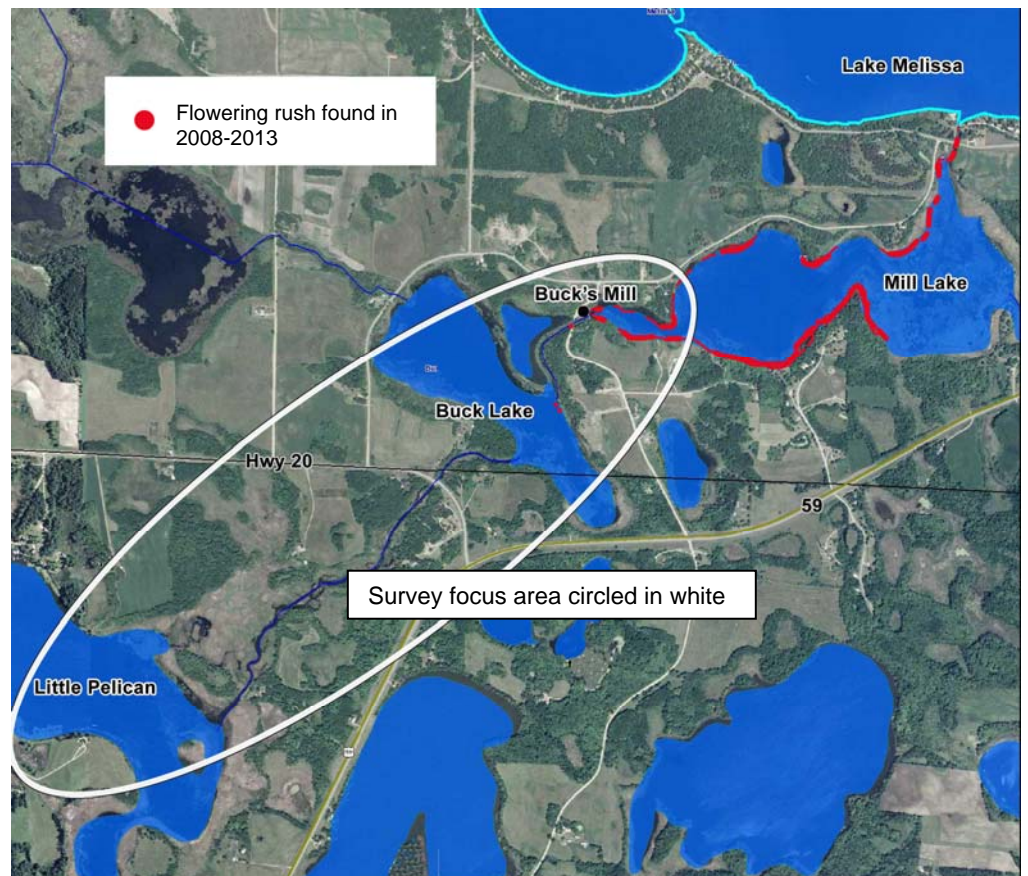
Historically chemical treatment of FR was expensive and unsuccessful. The PRWD began experimenting with new chemicals in 2003. The chemical imazapyr under the label *Habitat* displayed promising results. The PRWD has since ceased mechanical harvesting and is switching to sole chemical treatment for FR. In 2004 and 2005 tests plant density reductions between 50 and 95% were obtained using *Habitat*. The chemical must be applied directly to the emerged portion of the plant, and must remain on the plant long enough to be absorbed into the plant and carried to the roots. Rain, wind and wave action, and boating can reduce the efficacy of the treatment. Treated FR plants will not wither and die immediately; rather successful treatment will result in the plants not growing next year. Plants that do not appear above the water surface cannot be treated and therefore may emerge next year. Accordingly, successive years of treatment may be necessary. *Habitat* has no effect on submerged aquatic plants, or on fish or wildlife. There are no restrictions on swimming in or near treated sites. Boaters are urged to stay away from treated sites because boat waves can interfere with the treatment.

In 2010, PRWD started a 10 year FR Research and Treatment Program to find a better solution for controlling FR. This research showed that Diquot was very effective when applied in June and August. This successful herbicide treatment has allowed the chemical harvesting to end, which should help prevent the spread of plant fragments downstream.

PGOLID Contingency Control Plan

The Water Resource Coordinator shall monitor the district and upstream of the district for the introduction of FR, as well as the success of the treatment and methods of control used by the PRWD and DNR. The FR Contingency Control Plan will be updated accordingly.

Each year, numerous surveys will be conducted by the Water Resource Coordinator. Canoeing down the Pelican River is the best method, since many survey areas are too shallow and too dense with aquatic vegetation for a motorized boat. The survey focus will be from Bucks Mill Dam in Mill Lake, the Pelican River south to Buck Lake, and the Pelican River into Little Pelican Lake.



If small stands of FR are discovered south of Bucks Mill, the Water Resource Coordinator will acquire a DNR permit for hand removal. The Water Resource Coordinator with an accompanying PGOLID board member will remove the plant(s) with a shovel. All discovered stands of FR will be documented by a GPS location so the sites can be monitored in following years.

In the future, if larger areas of FR are discovered that are unable to be removed by hand, chemical treatment will need to be implemented. The Water Resource Coordinator will seek permission from all landowners within 150 feet of the proposed treatment area, and the PGOLID board will acquire a DNR permit and hire a chemical applicator to treat the infested areas. The chemical Diquot would be applied annually over several years for control. Residents near the infected area would be educated on the spread and treatment of FR to encouraging best management practices of this exotic plant.

The PGOLID board has set aside funding for chemical treatment of FR if the need arises. This flexibility in the budget allows for swift mitigation of any new problem areas.

The Water Resource Coordinator will keep in close contact with PRWD and the DNR as they assess the efficacy of the chemical treatment in the PRWD.

Relevant Contact Information

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